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THE EDITORS SAY:

Progress — Fact or Idea?

Just how much progress has the *California Journal of Educational Research* made? To answer this question it is necessary to distinguish between the *fact* and the *idea* of progress. In determining the *fact* of progress, the evaluator must recall the past and find if there has been a change for the better. In doing this he must study the changes which have taken place, formulate a standard, and then judge if there has been an improvement. In determining the fact of progress for the CJER, the most obvious way to ascertain improvement is to examine the periodical's circulation. If the CJER is "doing better," there should be an increased number of subscriptions. Over a period of years there has been a steady, gradual increase in the demands for the publication. However, there are even more encouraging signs. To illustrate, let us examine the last three issues. Here we can find some indications that the quality of articles has been recognized. For example, a well-known council selected from the September Journal an article for special commendation. The November issue has been purchased by an unusually large number of readers. Reprints have been popular. A testing service has distributed one of the manuscripts by the thousands. In January there were five times as many reprints as the original Journals printed.

When you consider the *idea* of progress, an entirely different process must be employed. Here it is necessary to turn from the past and present and look to the future. The past is used only as a basis for prophecy, while the present is the occasion for making plans to fulfill hopes. Just what are the hopes for the CJER? Ideally, the editors and the Advisory Council dream of bringing the best research studies to the schools of the West Coast. If this dream is realized, there are many implications. In the first place, it means all schools must be reached—public, private, and parochial. Then, research must be made applicable to all levels and specialties of teaching—to kindergarten instructors, university professors, superintendents, speech correctionists, psychologists, and the myriad of others with diverse interests and duties. The responsibilities ahead are almost unbelievable. How can a sufficient number of high-level studies and experiments be obtained for the many different positions and interests? How can investigators be enticed to publish them?

The *fact* of progress means the record of achievement. In this, the CJER has enjoyed some success. The *idea* of progress sets the goal to be achieved. Here lies the challenge. JHB

Research and Administration

WILLIAM S. BRISCOE

In discussing this topic it might be best to begin by considering the limitations of research as an aid to administration and to ask ourselves the question "What should Administration[1] not expect of Research?"

Administration should not expect that research will relieve the administrator of making decisions. Research can help in decision making by providing facts, and through analysis it can help to show relationships and make the implications of facts apparent. However, research cannot and should not be expected, nor should it attempt, to tell the administrator what to do. Let us take an example to illustrate the meaning.

> A Superintendent of Schools asked his Research Department to make systematic studies of the factors which might affect the growth of school population and, on the basis of the data they could assemble, to make some projections of the population of the schools for the next five years. Such studies were made and, so far as the research and statistical procedures were concerned, were very well done. Nonetheless, the Superintendent felt that it would be a clear neglect of duty, as well as improper use of research findings, to accept the answers without careful inspection of the factors involved and without considering, with his research people and others who had knowledge of the community, all the various possible conclusions. As a result, further investigations were made and the original population estimates were considerably reduced. Time proved the revised estimates to be quite accurate.

[1]When the words Research and Administration are capitalized in this article they are used as names for the central administration and for staff members engaged in directing and conducting administrative research.

Dr. William S. Briscoe, Professor of Education at University of California at Los Angeles since 1953, became a member of the California Advisory Council on Educational Research last year. He was formerly Superintendent of Schools in Santa Monica and Assistant Superintendent of the Oakland schools. Dr. Briscoe, who obtained his doctorate at Stanford University in 1950, is one of the authors of a remedial reader series, Deep Sea Adventure. *His article was developed from a speech to the Los Angeles County Research Group last October.*

The exercise of an administrative judgment on the validity and accuracy of predictions is essential in administrative research and should be insisted upon by the Research Director as a part of the research process. Sometimes administrators do not so participate, but accept research findings without examination. Usually this comes about where population estimates are reported directly to Personnel and on the basis of such estimates Personnel certifies the number of positions to Business Administration without staff examination at top level with the Superintendent participating. On occasion, Superintendents have let blame fall on the Research Department either directly or by implication for such a mistake. A Research Director who does not qualify his answers in such a way as to leave the decision to the administrator makes an error which is likely sooner or later to put him in an awkward position.

How can a Research Director qualify his answers to problems? For one thing, he can suggest possible alternative solutions. There is almost always more than one possible solution. Another thing he can do is to suggest contingent implications that might arise from or be associated with the proposed solution or solutions. Both of these procedures will involve the administrator in the research as he should be, and will leave decision making and responsibility where it belongs—with the administrator.

Research Not Infallible

When the Research Department has been quite successful in its predictions of population increase or school enrollments, superintendents and boards of education sometimes assume this is the normal; that is, that the department can be expected to bat 1,000 or very close to it. On occasion, when the department falls short of this mark, boards and superintendents are critical.

What can be done to correct this unfortunate tendency?

1. In making commitments based on predictions, consideration should always be given to what should be done in the event that unforeseen factors and circumstances cause the predictions to be in error.

2. It is always good procedure to plan solutions, if possible, in a succession of steps which may be taken or not as conditions may require.

Example: A Southern California city. Population predictions by Research indicated a new school site would be needed if certain developments were to take place. A land use study by Research showed continuously rising costs of land. The area under consideration, if not tied up for school purposes, would be built upon and would house enough children to require three additional teachers. It was recommended

that the site be purchased as a standby site. The cost of the site would be saved in teachers' salaries if not used; if used, considerable savings would be made because of a probable price rise. If the site were not used, studies indicated that it might be sold later for considerably more than it cost the Board. The site was sold six years later for approximately three times its original cost.

Example: A Southern California Union High School and Junior College District. If industrial development and housing were to continue as expected, there would be a great increase in high school and junior college enrollments. The possibility of such development seemed certain enough to warrant:

(a) Authorization of the necessary bonds to cover an eight to ten-year period, and

(b) Acquisition of the necessary sites before further subdivision.

A four-step plan was developed. One feature of the plan was to sell bonds as needed as assessed valuation permitted, or as the bond market warranted. Incidentally, one of the most potent reasons which led the citizens to agree to the moving of the Junior College was the city parking problem. Identification of the development of the schools with the total development of the city and of the area rallied many groups to the support of the school program who otherwise might not have been interested or might even have opposed such a program.

Research and Sound Administration

Administration is concerned with decision making in respect to many questions which arise from the interplay of forces that are not static. Rarely are two administrative problems exactly alike. Thus, fact finding and analysis become essential to the solution of almost every important administrative problem, and almost every administrative problem involves three major areas of concern:

1. Educational values are always concerned. Education is the business of the schools. Whatever is done must find its justification in terms of improved conditions of learning or in improved learning. Economy, for example, is to be judged in the light of what education one gets for the dollar spent. The most economical may not be the cheapest.

2. Everything costs money and has budget and tax implications, either directly or indirectly.

3. Problems of communication are always present. Often these have

political overtones and they always have implications for public relations.

Research cannot function in the field of administration as it should unless it recognizes and appreciates these relationships, and unless it becomes identified with Administration. This statement assumes that the Superintendent recognizes that research is a process of thinking and that research in administration is fundamentally critical thinking about the problems of education and is basic to sound administrative thinking.

There is evidence that many administrators do not recognize this function of research in administration. About five years ago the writer gathered research materials from a number of leading school systems both in and outside of California to learn what research such school systems were carrying on. Examination of the materials and examination of the charts of administrative organization showed that, outside of educational testing and evaluation, in far too many school systems people in research were concerned mainly with finding out what other school systems were doing about certain problems. There was little evidence that Research was closely related to Administration and almost no evidence that research was considered a part of the administrative thinking process.

In view of these facts, Research cannot play an effective role in the process of administrative thinking unless it knows and understands the nature of Administration. It cannot know and understand as it should unless those who direct research are cognizant of the interrelated major functions of the schools. Without participation at the top-level, Research Directors cannot possibly be well enough informed to do worth-while research.

Problems Most Effectively Handled Through Research

Any problem which requires systematic thinking (and what problem does not?) is susceptible of research. John Dewey and Truman Kelly have provided an outline of scientific thinking in six steps which provide a direct analogy to scientific research.[2] The steps are: (1) A felt need, (2) The problem, (3) The hypothesis, (4) Collection of data as evidence, (5) Concluding belief, and (6) General value of the conclusion. Following is an analysis of these six steps:

1. **A felt need.** This may be thought of as some difficulty felt in the adaptation of means to an end. In order that needs may be recognized it is necessary that the problems of the schools be considered in relation to

[2]Rummel, J. Francis. *An Introduction to Research Procedures in Education.* New York: Harper and Brothers, 1958, p. 12.

the problems of the communities of which they are a part, and of the state and the nation.

Example: Santa Monica in 1950. In 1950, prior to the outbreak of the Korean War, Santa Monica was considering the possibility of a bond issue. Before the citizens' committee had been appointed, the Korean incident began. Members of the Board and a number of leading citizens were doubtful that a bond issue should be attempted. Research in the field of international relations brought forth the following ideas:[3]

It is possible that the war in which we are engaged may eventually call for great sacrifices.

The aim of the enemy appears to be to wear us down by involving us in various incidents such as the Korean one.

Through this means and through stirring up political, economic, inter-group and inter-racial dissension and strife within our country and between us and other countries, the enemy hopes to lay such a financial and mental and emotional burden upon us that our economic system will break down and our spirit eventually collapse.

The war in which we are engaged must be fought to a conclusion. The war we have entered is in every way a total war. Actually we must fight three wars simultaneously: a military war, an economic war, and an ideological war.

We could win the military phase and lose the total war because of economic or social collapse or because of fundamental ideological changes incompatible with the American ideal.

Unless we can demonstrate that American democracy expressed in political, economic and social action can produce a better way of life in all respects than communism both at home and in other democratic countries, and in those countries that have not chosen the way they will go, we shall lose the war.

To win we must preserve the essentials of our way of life while we fight. Among these essentials, education is one of the most important. In fact, education properly directed is the most important weapon in our arsenal of defense—and, of offense. Through education we must make clear to ourselves and to others the things for which we fight and the things we must do to win.

Let us resolve to carry on undiminished the program we have under way to provide the best possible fundamental education for every child, to emphasize individual needs, to provide such security

[3]*Elementary School at Mid-Century*, 23rd Year Book, 1951, C.E.S.A., pp. 215-222.

for every child as we can and to run our schools and classrooms as economically as possible. This last point may need special emphasis. The drain of war upon our economic resources will require every person to produce more efficiently. We cannot hope to win the struggle to which we are committed without hard work. This is an idea which might well be communicated to the students in our schools.

These ideas were presented to the Board and the teachers at the opening teachers' meeting of the fall of 1950, and later to the citizens' committee with good effect. The wait-and-see idea was abandoned and the bonds were passed by a vote of more than eight to one.

It will be noted that here we find a relationship between educational objectives, community thought, and finances. It was necessary to show that the action contemplated was logical and consistent with the total situation of which the schools were only a part. The actions to be taken had to be consistent with what seemed to spell out a total program of defense. The most fundamental questions had to be considered and it had to be shown that the action proposed was consistent with and would tend to advance the solution of the much larger problems which faced the nation.

The implications for research are that those who engage in it should be broadly informed and concerned with major values and not simply with the small problems of the current moment.

2. **The problem.** Once one is aware of the major situational problem he must define the immediate problem in terms of the larger problem, as well as in terms of the immediate.

3. **The hypothesis.** The third step is that of stating a possible solution and testing it against the larger major problems in the total situation. Is the question relevant? A possible solution is outlined. Such a solution should fit into a pattern that will make sense within a whole and meaningful pattern.

4. **Collection of data as evidence.** This means the rational elaboration of the idea or hypothesis.

5. **Concluding belief.** On the basis of the evidence there is corroboration or rejection of the idea and the formation of a conclusion or conclusions. There may be alternatives and these should be considered. There may also be evidence which has not been considered, and the possibility of this fact should not be overlooked. This, to some degree, distinguishes administrative research from academic research, for the nature of administration often makes it impossible to consider all the facts. In practical administra-

tion conclusions may be modified on the basis of additional expert judgment after the facts are in, as in the use of the population predictions mentioned heretofore.

6. **General value of the conclusion.** Can this solution be applied to similar situations without restudy and modification?

Areas of Research in Administration

As pointed out earlier in this paper, there are almost always three aspects to be considered in connection with most administrative problems: educational values; finance; and communications, including public relations. The schools are a part of the community and are affected by what is happening in it; therefore the ideas of the people concerning education, their cultural levels, the economy of the community, the objectives of sub-groups, and the interplay of political and other forces, all affect and to some degree change and limit the course administration can take. If the administrator is to steer a course toward effective education he must know the facts about what is happening in the community relative to ideas concerning education and the culture generally. He must also know how fast the population is growing, what is happening to the local economy, and in what directions and in what ways pressure groups are at work. Research should be continuously assembling and relating facts in these areas.

Facts outside the community are also likely to affect development within it, such as, for example, public and private planning. This is particularly true in metropolitan regions where state and county planning groups and private real estate and industrial developers often undertake projects of direct concern to the planning of the schools and the educational program without the previous knowledge of the school's Administration. Research should systematically canvass such possible developments by maintaining close liaison with various planning bodies and with private developers. The community is part of a larger cultural and economic area and will be affected by what is happening in the larger area. The future growth and development of the community will be determined to a considerable degree by the relation it bears and by the function it may be expected to serve in the socio-economic fabric of the larger area. Thus, research and fact-finding should not be limited to the specific community, but should include assessment of those factors in the large area of which it is a part which affect the specific community and its schools. A more difficult and somewhat more general problem, but a very important one, is to keep alert to events and developing ideas in the general culture of the country and of the world which may shape the attitudes of people relative to issues vital to education and the schools. The implication for Research in these

suggestions is that local problems should be considered in the perspective of the larger area of which the community is a part and of the world of ideas generally which may affect it.

Some Specific Assignments

Research should provide Administration with monthly reports which should include the following: the average daily attendance accumulative to date; assessed valuation accumulative to date; births corrected for residence to date and spotted on maps to attendance areas within the school district; building starts spotted on maps of suitable size to the various attendance areas and recorded as R1, R2, R3, C1, etc. Other information which should be considered monthly should include comparative bank clearings; information concerning any new planned developments, residential or otherwise; any reported changes in the earnings of major industries in the community or area (which may affect the school), and any extension or contraction of their operations. The writer has found that where the superintendent himself keeps in periodic touch with the business and industrial leaders in the community he opens the way to his research people to get the above information, and, on occasion, such business and industrial leaders will give the superintendent or a top assistant advance information not subject to release for publication which is of value to the schools.

Since schools are administered for the benefit of the pupils and since the business is education, the superintendent needs periodic reports concerning the effectiveness of the educational program. These reports may vary from time to time dependent upon current emphases, but, in general, Administration wants to know the following at all time: the progress of children in their studies, reported in such a way as to reveal the number of superior, average, and below average performers and some analysis of each group; the extent to which the talents and special abilities of pupils in the schools are being cultivated; the adequacy of the equipment and supplies furnished the teachers; progress in curriculum development; the adequacy of the teaching staff; the status of health of pupils and teachers as reflected in attendance; and a report of accidents. The Research Department may not prepare all of these reports, but it should keep all such reports organized for research purposes and should assist technically in their preparation.

Another area of research with which the Research Department should be familiar has to do with Business Department activities such as buildings and maintenance and transportation. Studies which may be made by the Business Department respecting current conditions of the building market, bonds and bond interest rates, prices of materials and labor, should be filed with Research. A record system should be set up which will give the history

of the maintenance problems of each building. In one school system the Business Department asked Research to make a study of broken windows. It was found that certain principals always had more broken windows in their schools than others, and that when a principal with a good record was transferred to a school with a poor record for broken windows the number of broken windows was greatly reduced. Psychologists got at the reason for window breakage and, as a result, the window breakage throughout the whole system was materially reduced. Similar investigations were made in other fields of maintenance with similar results. Administrative research should participate with the Business Department where it can be effective. It will be found to be much more effective if it is assigned the responsibility of reviewing, organizing and indexing for reference various studies made by the Business Department. This, of course, applies to all other departments as well.

Organizational Structure of Research

It must be apparent by this time that the Research Department should be a major division of the schools. Closely related to it, organizationally, should be the professional library and communications, including publications and publicity. The professional library is a tool for study. Communications, including publications and publicity, are the means of keeping the school organization functioning effectively, but they are likely to be ineffective unless they are tied in closely with research and fact finding. In organizing the Research Department care must be taken that it does not become merely a department of auxiliary services. The research and fact-finding functions should remain paramount; but the tools and the means of translating research into effective communications are a part of the whole process. If enough funds were provided and if a Research Director were of the stature to assume the role of a top staff officer, research, library and communications could be effectively combined in one organization. A few leading school systems have done it. Probably what should be done will depend upon each situation, but in any type of organization there must be such close liaison between research, library and communications as to make of them an effective unit. Whatever the organization, the Research Director should report directly to the Superintendent and should be a member of the Superintendent's Cabinet or Council.

Sick Leave for Teachers

JOHN W. STALLINGS

Are teachers absent more for illness reasons now than they were when sick leave accumulation was limited? This question and others relative to sick leave were answered recently. An intensive investigation was made of the personnel records of sixteen representative public school districts in Southern California. A questionnaire was sent to each of the forty-eight state school officers and state teachers' associations to determine sick leave practices throughout the country. Finally, a check list of sick leave principles for certificated school employees was evaluated by a jury of specialists.

It was found that on a nation-wide scale twenty-four states have written sick leave provisions into their statutes, while the laws of the other half of the forty-eight states have remained silent on the subject. The number of days granted annually for sick leave by the twenty-four states with state laws governing sick leave varies from 5 to 12½. The arithmetical average was 8.3 days, the median was 10, and the mode 10.

In Southern California an analysis of personnel records of sixteen school districts for the years 1952-53 and 1955-56 gave information from which the following facts were drawn:

1. The average absence for sick leave per certificated employee in 1952-53 was 4.73 days; in 1955-56, 3.12 days. (In 1952-53 a teacher could accumulate a maximum of forty days of sick leave allowance while in 1955-56 there was an unlimited accumulation allowance.)

2. The average sick leave absence per employee is almost twice as much for women as for men—4.77 days as compared to 2.59 days.

3. There is very little difference in the use of sick leave by permanent and probationary teachers. Permanent teachers used an average of about one-half day more each for the 1955-56 year than did probationary teachers.

4. Teachers not re-employed in a district made much more liberal use

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of sick leave than did teachers who were re-employed. Non-retained employees used an average of 6.3 days per year, while those retained used an average of 3.9 days.

5. Sick leave cost $2.85 per average daily attendance and $70.10 per certificated employee in the districts surveyed for the year 1955-56.

6. The average sick leave used by certificated employees by school levels was: Elementary, 4.81 days; Junior high, 3.49 days; Senior high, 3.07 days; and Administrators, 2.09 days.

7. The average absence per certificated employee for 1955-56 by types of districts was: Elementary, 4.20 days; High, 3.68 days; Unified, 3.78 days; and Elementary and High under one administration, 4.02 days.

8. The average sick leave absence for elementary men teachers in 1955-56 was 3.02 days as compared to an average absence for elementary women teachers of 4.95 days. High school men teachers were absent an average of 2.66 days for sick leave, while high school women teachers were absent an average of 4.35 days.

9. Teachers in the 56-60 year old group had the greatest average amount of sick leave: 5.4 days. The age group with the smallest incidence of sick leave absence was the 31-35 year old group: 3.6 days.

10. March was the calendar month with the highest average number of teacher absences per day due to illness. The average length of each absence was greatest in June: 2.4 days.

11. Thirty-one per cent of the teachers were absent zero days; about 7 per cent were absent eleven days or more. Approximately 46 per cent of the teachers were absent one to five days.

Suggested Principles

A majority of the jury of specialists believed that a school district would have a good sick leave policy for teachers if the following principles were maintained:

1. All certificated full-time employees of the public schools should be given some days of absence with full pay for sick leave.

2. Sick leave should be given only for personal illness, injury or quarantine. (This includes sick leave for reasons of illness in immediate family, pregnancy, or any other reason.)

3. Provisions granting sick leave to teachers should be written into the State Education Code.

4. Unused days of sick leave should be allowed to accumulate without limit.

5. Some protection for a stipulated length of time should be given the certificated employee against total loss of salary after he has used his days of sick leave at full pay.

6. The entire year's allowance of sick leave should be available for the

teacher to use if needed on the first day of school.

7. A certificated employee working less than full-time should be entitled to a proportional amount of sick leave. (Example, a teacher working two days a week should get two-fifths of a year's sick leave allowance.)

8. A teacher of adult education classes should be entitled to sick leave on the same ratio that his employment bears to full-time employment.

9. Sick leave should be allowed as a benefit to home teachers, long-term substitutes, and summer school teachers.

10. When the employee is entitled to full pay for sick leave and payments for workmen's compensation, his salary should be reduced by the amount of the workmen's compensation payment.

11. When the employee receives both payments in full (sick leave and workmen's compensation), his sick leave should be charged in full for the amount of the absence.

12. Public school districts should assume partial cost of group health and accident insurance for certificated employees. The cost of such insurance for certificated employees should be shared equally by the district and the employee.

13. If a teacher's daily salary rate is determined by including only the actual days taught, his sick leave should be charged only for absence on actual school days.

14. The number of days of sick leave allowance at full-pay each year for certificated employees should be ten. (Exactly 55 per cent stated various amounts that were all greater than ten days.)

15. The amount paid the teacher after he has used his full-pay sick leave should be the difference between his pay and that of the substitute.

16. The length of time for which a teacher is allowed the difference between his salary and the substitute's after he has used his full-pay sick leave should be for the remainder of the current school year.

A majority of the jury of specialists was **in disagreement with the following** proposed principles of sick leave for certificated personnel:

1. The teacher should receive full pay for all unused days of sick leave upon separation from the district.

2. The teacher should be allowed to transfer his unused days of sick leave from one district to another upon changes in employment.

3. A certificated employee should receive full pay for sick leave absence even after his accumulated sick leave benefits are exhausted, if no substitute is employed for the certificated employee's vacancy.

4. Sick leave should be allowed as a benefit to day-by-day substitute teachers and hourly certificated employees.

5. The certificated employee, when eligible, should receive both full pay for sick leave absence and payments from the State Workmen's Compensation Insurance Fund.

6. Public school districts should assume the full cost of group health and accident insurance for certificated employees.

7. Maternity should be a reason for granting sick leave with pay to certificated employees.

Conclusions

The following conclusions were developed as a result of an analysis of the information reported in the findings:

1. Certificated public school employees in California are using their sick leave benefits intelligently and with discrimination.

2. Public school districts are lagging behind business and industry in the use of methods other than paid sick leave to prevent the employee's income from stopping when he is unable to work because of illness.

3. Certificated public school employees are absent less when there is no limit on the number of days' sick leave which may be accumulated than when a limit is established.

4. The total cost of an adequate sick leave program is not excessive and is more than justifiable in terms of the health and welfare of the public and teachers.

5. There has been an increase in allowance of sick leave for certificated school employees on a nation-wide basis. This increase has been both in the annual allowance and in the number of days accumulation allowance.

Recommendations

This study has indicated the need for certain recommendations which would improve district practices in granting sick leave benefits to certificated public school employees. These recommendations are as follows:

1. All states should allow full-time certificated public school employees a minimum of ten days each year for sick leave.

2. A certificated public school employee working less than full-time should be allowed a proportional amount of sick leave.

3. The unused portion of days of sick leave should be allowed to accumulate without limit.

4. The entire year's allowance of sick leave should be available on the first day of school for the certificated public school employee to use if needed.

5. Provisions granting minimum sick leave to certificated public school employees should be written into all of the states' education codes.

6. A certificated public school employee serving in more than one district should be entitled to sick leave in each position.

(Continued on page 94)

Identification of Children Gifted in Science

A Constellation of Traits

ELIZABETH HONE

At the high school level children with high aptitude for science may identify themselves in several ways. They may do this by electing science courses where there is a choice, by high grade performance in elective or required science courses, or by outstanding work in science clubs or individual science hobbies.

Children may not be so identified at the elementary level because of a different curriculum organization and a general lack of attention to science in the elementary grades. If we could early identify these potentially gifted young scientists, we might give them an earlier broader training for science. Modern science has become increasingly complex and specialized, yet our present curriculum organization does not, in general, provide children with any formal science experience until they reach high school. In high school they may take the science courses required for college entrance. In college they may take the minimum science requirements for the general education pattern, even though such courses are generally too specialized to complete gaps in science background. For any well paid and important scientific work, these students must do an increasing amount of graduate work. Studies of age and achievement show that many scientists have done their most important creative work by their early thirties. Thus, by late identification of scientific talent, we may lose the possible contributions of many gifted children. By omitting science from the elementary school, we may be robbing children of the opportunity to build a broad cumulative background in science.

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Nature of Check-lists

It was our idea that we might identify younger children gifted in science by developing from all possible references a constellation of traits noted as characteristic of high school children with high level ability in science. If elementary teachers checked their gifted children against a list of these traits, we might possibly have a measure of potential ability in science. Similarly, we might draw up a list of characteristics of most gifted children to be submitted to high school science teachers to check off characteristics which seemed to fit the high aptitude science students in their classes.

It was our hypothesis that science talent is a development of general giftedness. We believed that gifted students show ability in science rather than in social science, the humanities, or the arts because of some "Activating Factor," such as parents or relatives interested in science or an inspiring science teacher. In other words, high school students gifted in science may show a constellation of traits similar to that of children gifted in general.

If the high school teachers and the elementary teachers checked the same traits in the two different instruments, might we not be dealing with the same factor (Spearman's *G* factor)? In other words, high level ability in science might be considered a function of general intelligence. A gifted student conditioned by activating factors in the environment might make a contribution to science, or to the arts, or to the humanities. The area of contribution would depend on the environmental factors. Thus, we may begin to see the importance of environment in conditioning gifted youngsters toward science, or indeed toward any area of human accomplishment.

Since Sputnik has awakened the general public to the need for more science in school, we see a slowly increasing amount of science in the schools at all levels. Is it not conceivable that we may eventually face a shortage of social scientists, leaders in human relations, long-range planning, government, unless we improve the child's early environment along these lines? In other words, do we not owe it to gifted children to give them rich experiences in all fields of knowledge?

Procedures

In order to develop a list of traits characteristic of high school students with scientific ability, we scanned the literature and found 25 to 30 writers who made specific references to characteristics of students gifted in science. We noted these traits, each on a separate card, and in the author's own word or words. The resulting large stack of cards was spread out until a pattern began to emerge. Eventually, the sub-categories seemed to group under the headings: Personal, Socio-Emotional, Intellectual. The original

FIGURE I

Characteristics of Gifted Children

Part I.

1. Studious; wins honors
2. 1-2 years ahead of class in reading
3. 1-2 years ahead of class in arithmetic
4. reads voraciously in science; reads beyond requirement
5. writes clearly, accurately
6. speaks easily, fluently
7. is mentally alert—rapid learner
8. has extraordinary memory
9. has wide range of abilities, i.e., mathematics, music, literature
10. learns mathematical skills easily
11. has intense, wide-ranging curiosity
12. has ability to observe and record
13. is skeptical, scrutinizes, challenges
14. is inventive, creative
15. is able to generalize
16. plans ahead
17. intuitively develops tentative hypotheses
18. is capable of abstract reasoning

Part II

19. demonstrates intellectual leadership
20. demonstrates high social responsibility
21. is democratic—friendly
22. is mixture of idealist and realist
23. has philosophical orientation
24. looks for cause and effect relationships
25. is sensitive to problems
26. is sensitive to environmental stimuli
27. is socially mature—responsible
28. is exceptionally honest
29. is ambitious—willing to work hard
30. gives tireless attention to detail
31. can work steadily without being distracted
32. has greater than average persistence
33. has rare initiative
34. is self-directed—inner directed
35. has tendency to introversion
36. has passion for freedom
37. is enthusiastic, energetic
38. is not easily discouraged
39. may seem indifferent to normally accepted procedures
40. may show variations from average personality pattern

Part III A (Circle one)

41. Number of children in the family: 1, 2, 3, 4, 5, 6
42. Economic background—good, poor
43. Place of birth—native, foreign born
44. Aptitude for constructing, repairing things
45. Eye-hand coordination—good, poor
46. Manipulation of laboratory equipment—awkward, dexterous

B. (Circle any which apply)

47. Interested in art, music, sports, world events
48. Enjoys games as chess, football, tennis, bridge
49. Collects shells, stamps, butterflies, rocks (other; fill in, please)

list was worked and reworked and reduced to the present one-page list of fifty items (Fig. I).

Similarly, a list of traits of gifted children was compiled from over 100 writers on the general subject of giftedness. (Our total bibliography contains over 150 titles.) The striking thing was that both lists of traits emerged along parallel lines, even to duplication of most outstanding traits and the phraseology of description. Although this checklist has never been used, we believed the profile of traits resulting from its use would be highly similar to the one obtainable from the list of elementary teachers.

Pre-testing

The profile of high school students gifted in science was administered to about 60 elementary and high school teachers and administrators in assorted small groups. The most common reaction, especially from the elementary teachers, was the realization of the presence of gifted youngsters in their elementary classes. For this reason alone they felt the 5 or 10 minutes spent checking the list was time well spent.

The pre-testing showed the list was too positively structured—there were too many obvious yes answers.

Some items in Part III (items 41-49) needed some restatement for clarification and to avoid overlapping.

Further Studies

The study offers possibilities for additional investigations. (1) The first instrument might be applied to a larger sampling. (2) The second instrument might be reduced to a similar one-page list and applied to a representative sampling. (3) Either list might be applied to experimental elementary grades which had received science instruction, to control groups which had not, or to traditional heterogenous groups or cluster groups.

The literature of the past 18 months might be checked for additional traits, although it is our belief that the findings and additions will not materially change the pattern of the two instruments. It is our wish and intention to offer all possible assistance to those who may consider the use and application of either or both instruments.

Teacher Characteristics in Relation To Marital Status of the Teacher

DAVID G. RYANS

Discussion frequently is encountered regarding the respective contributions of married and unmarried teachers in the schools. Much has been said on this topic, but little evidence presented. It is the intent of this paper to present some evidence. Specifically, the purpose of this report is to determine whether teachers classified according to marital status vary as groups with regard to certain measurable teacher characteristics.

The investigations were conducted in connection with the Teacher Characteristics Study, a project of the American Council on Education and the Grant Foundation. The Study as a whole was devoted to the description of procedures employed and results obtained in attempts to (1) *identify* certain patterns of teacher classroom behavior and the manifestations of certain value systems and cognitive and emotional traits of teachers (*i.e.*, the designation and description of criterion components and the development of criterion measures), and (2) isolate and then combine into scales *correlates*, or signs (provided by responses to printed questions concerning the teacher's preferences, experiences, self-appraisals, judgments, and the like), of such identified teacher characteristics.

The characteristics studied here in relation to marital status were those, noted on page 69, for which scores were obtained from the Teacher Characteristics Schedule.

Comparisons of teachers with respect to their Schedule scores were replicated with two samples, one known as the Basic Analysis Sample and the other Survey Sample. The Basic Analysis Sample consisted of teachers in relatively large school systems who were available, both for the systematic observations undertaken by the Study and for inventorying with respect to the correlates instruments developed (*e.g.*, the Teacher Characteristics Schedule). The Survey Sample, on the other hand, was made up of teachers throughout the United States as a whole who completed the Teacher Characteristics Schedule upon the request of their respective principals, the sampling of principals having been made from national lists with systematic selection to provide probability samples on the available frames.

Since it seemed reasonable to hypothesize that certain subpopulations

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Teacher Characteristics Studied

X_{co}	Understanding, friendly *vs.* aloof, egocentric restricted classroom behavior.
Y_{co}	Responsible, businesslike, systematic *vs.* evading, unplanned, slipshod behavior.
Z_{co}	Stimulating, imaginative, surgent *vs.* dull, routine classroom behavior.
R_{co}	Favorable *vs.* unfavorable opinions of pupils.
$R1_{co}$	Favorable *vs.* unfavorable opinions of democratic classroom procedures.
Q_{co}	Favorable *vs.* unfavorable opinions of administrative and other school personnel.
B_{co}	Learning-centered ("traditional") *vs.* child-centered ("permissive") educational viewpoints.
I_{ci} or I_{co}	Superior verbal understanding (comprehension) *vs.* poor verbal understanding.
S_{ci} or S_{co}	Emotional stability (ad ustment) *vs.* instability.
V_{ci} or V_{co}	Avoidance of excessive use of self-boosting and socially acceptable responses (validity of response) *vs.* excessive use of self-enhancing responses.

of teachers might differ systematically from others with regard to teacher characteristics, comparisons were made not only of teachers in general (elementary and secondary teachers combined) but also of elementary teachers considered alone, secondary teachers alone, and for the Basic Analysis Sample, the major subpopulations of secondary teachers consisting of mathematics-science teachers and English-social studies teachers. The results of the analyses are presented in Tables I, II, and III and are summarized in the paragraphs which follow.

In the Survey Sample, when marital status classification is based upon elementary and secondary teachers combined, only a few significant differences are in evidence. Others apparently are obscured by the lumping of teachers of different grades and subjects. Significant F ratios (.05 level) were obtained relative to responsible, businesslike classroom behavior (Y_{co}), stimulating classroom behavior (Z_{co}), verbal understanding (I_{ci}), and emotional stability (S_{ci}). Teachers who were not, and had not been, married scored significantly higher on the average than married teachers, with respect to responsible, businesslike classroom behavior and verbal understanding. Differences in means favored the married teachers when stimulating classroom behavior and emotional stability were considered. It is interesting to note that the "widowed" group exceeded both single and married teachers with respect to characteristic Y_{co}, and that they shared high mean scores with the single teachers for characteristic I_{ci}.

TABLE I

Comparison of Teacher Characteristics Schedule Scores of Teachers (Survey Sample) Classified According to Marital Status

Marital Status	N*	X_{co} M	X_{co} σ	Y_{co} M	Y_{co} σ	Z_{co} M	Z_{co} σ	R_{co} M	R_{co} σ	RI_{co} M	RI_{co} σ	Q_{co} M	Q_{co} σ	B_{co} M	B_{co} σ	I_{ci} M	I_{ci} σ	S_{ci} M	S_{ci} σ	V_{ci} M	V_{ci} σ
Single	658	34.2	6.8	28.2	3.9	27.0	4.7	31.5	8.6	32.3	6.5	32.6	7.4	21.5	8.8	28.9	7.8	21.1	7.9	37.0	8.6
Married	857	34.8	6.8	26.4	4.2	27.5	4.5	31.7	8.5	32.1	6.3	33.1	6.9	21.9	8.6	27.7	7.9	23.1	8.1	37.6	8.3
Separated-Divorced	47	33.6	7.6	26.8	3.3	27.6	5.5	32.0	9.8	32.1	7.2	32.6	7.9	21.7	8.6	27.9	7.4	21.6	7.4	35.9	8.7
Widowed	64	35.4	6.1	29.5	3.9	28.3	4.7	31.4	7.4	32.0	5.7	31.2	5.6	21.3	7.4	28.9	8.7	21.2	7.9	36.7	8.5
Aggregate Sample	1640	34.5	6.8	27.3	4.2	27.3	4.6	31.6	8.5	32.1	6.4	32.8	7.1	21.8	8.6	28.2	7.9	22.1	8.1	37.2	8.4

TABLE II

Comparison of Teacher Characteristics Schedule Scores of Elementary and Secondary Teachers (Survey Sample) Classified According to Marital Status

Marital Status	N*	X_{co} M	X_{co} σ	Y_{co} M	Y_{co} σ	Z_{co} M	Z_{co} σ	R_{co} M	R_{co} σ	RI_{co} M	RI_{co} σ	Q_{co} M	Q_{co} σ	B_{co} M	B_{co} σ	I_{ci} M	I_{ci} σ	S_{ci} M	S_{ci} σ	V_{ci} M	V_{ci} σ
Elementary Teachers																					
Single	288	41.8	14.9	27.3	8.1	37.8	11.0	32.8	13.6	27.1	10.3	27.3	9.0	26.3	8.6	26.7	7.3	21.5	8.0	36.3	8.3
Married	318	47.0	13.7	229.1	7.8	42.5	10.4	37.0	13.0	30.0	9.5	28.4	8.4	24.2	8.2	25.8	7.5	22.1	8.0	36.8	8.1
Separated-Divorced	27	38.7	13.1	25.9	8.2	36.2	8.3	31.9	14.6	26.0	10.5	28.1	9.6	28.5	9.4	26.0	8.2	20.6	7.6	34.0	8.0
Widowed	32	44.9	11.2	30.3	7.9	44.1	8.5	33.3	12.5	29.4	10.3	27.8	7.7	25.8	7.3	27.5	8.5	21.0	7.9	35.6	8.8
Aggregate Sample	670	44.3	14.4	28.2	8.0	40.3	10.8	34.8	13.5	28.5	10.1	27.9	8.7	25.4	8.5	26.2	7.5	21.7	8.0	36.5	8.3
Secondary Teachers																					
Single	370	34.6	6.9	35.7	6.4	27.4	6.4	36.9	10.9	34.9	10.1	29.1	7.7	52.2	12.1	30.7	7.6	20.8	7.9	37.5	8.7
Married	539	34.9	6.9	30.9	6.5	27.4	5.9	36.3	10.7	30.5	10.3	29.0	6.8	55.4	12.5	28.9	7.9	23.7	8.1	38.0	8.3
Separated-Divorced	20	38.5	6.8	33.5	5.3	28.8	6.5	40.1	12.8	36.6	10.9	28.3	8.0	49.3	11.4	30.4	5.4	23.0	6.9	38.3	9.0
Widowed	32	33.8	7.0	34.5	8.9	27.6	6.4	36.3	10.4	33.5	10.1	28.4	6.2	50.5	14.4	30.3	8.6	21.4	7.8	37.8	8.1
Aggregate Sample	970	34.8	6.9	32.9	6.9	27.5	6.1	36.6	10.8	32.4	10.4	29.0	7.2	53.9	12.5	29.7	7.8	22.5	8.1	37.9	8.4

* Discrepancy between ΣN and "Aggregate" N attributable to non-response.

TABLE III

Comparison of Teacher Characteristics Schedule Scores of Elementary and Secondary Teachers (Basic Analysis Sample) Classified According to Marital Status

Marital Status	N*	X_{co} M	X_{co} σ	Y_{co} M	Y_{co} σ	Z_{co} M	Z_{co} σ	R_{co} M	R_{co} σ	RI_{co} M	RI_{co} σ	Q_{co} M	Q_{co} σ	B_{co} M	B_{co} σ	I_{co} M	I_{co} σ	S_{co} M	S_{co} σ	V_{co} M	V_{co} σ
Elementary Teachers																					
Single	283	48.5	16.2	29.7	9.0	41.9	11.8	38.1	14.8	31.4	11.2	31.6	9.4	23.8	10.1	42.3	7.4	41.7	10.3	25.4	5.0
Married	575	52.7	14.9	31.4	8.7	45.5	10.8	41.7	15.0	33.5	10.9	32.8	9.6	22.1	9.1	42.1	7.5	43.5	9.7	24.7	4.6
Separated-Divorced	64	52.0	16.0	30.7	10.5	46.1	13.5	42.1	15.6	34.3	12.2	33.3	10.5	22.2	9.0	41.9	7.7	43.5	9.0	24.1	4.0
Widowed	48	47.9	17.8	33.4	8.8	43.3	11.0	41.1	17.1	34.2	12.1	34.9	12.1	23.8	9.4	40.6	8.5	42.2	10.3	23.4	4.4
Aggregate Basic Analysis Sample	978	51.2	15.6	30.9	9.0	44.4	11.4	40.6	15.2	32.9	11.2	32.6	9.8	22.7	9.4	42.0	7.5	43.0	9.8	24.8	4.7
Math-Science Teachers																					
Single	112	32.3	6.3	40.3	8.4	33.4	6.4	38.6	13.3	30.4	10.7	30.7	8.2	57.3	13.6	41.1	8.1	24.8	3.8	22.6	5.0
Married	338	32.6	5.9	34.4	7.0	31.4	5.9	37.3	12.3	27.6	10.7	30.9	7.3	59.7	13.3	35.4	8.0	30.1	4.1	22.7	4.9
Separated-Divorced	20	33.2	5.0	36.2	6.4	31.8	7.1	40.2	13.4	33.1	11.0	31.0	8.0	53.9	12.7	37.9	8.1	27.6	4.4	21.4	4.2
Widowed	21	28.0	6.0	40.3	6.5	29.5	7.4	38.6	13.5	32.7	12.6	33.5	8.7	59.3	14.1	39.4	7.8	25.4	4.4	22.4	4.0
Aggregate Basic Analysis Sample	497	32.3	6.1	35.7	7.8	31.7	6.3	37.7	12.5	28.5	10.8	31.1	7.7	58.9	13.3	36.5	8.4	28.7	4.7	22.5	4.9
English-Social Studies Teachers																					
Single	198	36.7	8.7	37.5	6.9	28.2	6.3	40.9	13.8	39.7	11.7	31.5	8.2	46.9	14.7	44.3	8.4	23.0	3.6	23.1	4.6
Married	309	39.9	8.3	32.5	7.4	29.1	6.8	43.8	12.4	40.4	11.7	32.3	8.4	44.4	14.1	41.7	9.0	28.4	4.2	22.9	5.0
Separated-Divorced	25	38.2	7.9	35.7	5.6	28.5	5.5	39.7	12.2	40.4	9.0	30.0	8.3	44.7	12.0	45.1	6.9	24.2	3.0	24.2	4.1
Widowed	25	36.8	7.7	37.7	4.7	28.3	6.5	39.0	11.9	38.9	10.9	32.0	8.5	48.6	11.7	43.8	8.8	24.4	3.3	22.2	4.6
Aggregate Basic Analysis Sample	568	38.4	8.6	34.7	7.4	28.7	6.6	42.4	13.0	40.1	11.5	32.0	8.3	45.6	14.1	42.9	8.8	26.1	4.7	23.0	4.8

* Discrepancy between ΣN and "Aggregate" N attributable to non-response.

Among elementary teachers, F ratios significant at the .05 level were obtained in both the Survey and Basic Analysis samples for X_{co}, Y_{co}, Z_{co}, and R_{co}. Additional significant F ratios were obtained in the Survey Sample for $R1_{co}$ and B_{co}. Where significant F ratios were obtained, t tests of the differences between means of married and single (never married) teachers were significant and favored the married group with respect to understanding, friendly classroom behavior (X_{co}), responsible, businesslike classroom behavior (Y_{co}), stimulating classroom behavior (Z_{co}), favorable attitude toward pupils (R_{co}), and child-centered educational viewpoints (B_{co}).

Among secondary teachers in general (Survey Sample), highly significant F ratios (and t ratios between married and single teachers) were obtained, with differences favorable to the single teachers relative to responsible, businesslike behavior (I_{co}), favorable attitude toward democratic classroom practices ($R1_{co}$), permissive educational viewpoints (B_{co}), and Verbal understanding (I_{co}), but with married teachers attaining superior scores relative to emotional stability (S_{ci}). Similar differences were found in the basic Analysis Sample relative to Y_{co}, I_{co}, and S_{co}.

In breaking down the secondary teacher sample into the component subject matter areas, the conclusions became still more specific to the subject matter group under consideration. Among mathematics-science teachers, the single teachers scored higher than married relative to responsible, businesslike classroom behavior (Y_{co}), stimulating classroom behavior (Z_{co}), favorable attitude toward democratic classroom practices ($R1_{co}$), and verbal understanding (I_{co}), with married teachers attaining higher scores relative to emotional stability (S_{co}). Among English-social studies teachers, the married group was significantly superior to the single group relative to understanding, friendly classroom behavior (X_{co}), favorable attitude toward pupils (R_{co}), and emotional stability (S_{co}), while the single teachers were superior to the married relative to responsible, businesslike classroom behavior (Y_{co}) and verbal understanding (I_{co}).

Quite apart from the actual differences relative to particular characteristics, it is important to note that the *patterns of differences* are not the same for the teachers responsible for different grades and subject matters, and while general trends (relating to the composite samples of teachers of all grades and subjects) are apparent, it probably is more important to recognize the interaction of marital status with grade or subject taught when considering the teacher characteristics investigated.

Role of Faculties in Independent Colleges on the West Coast

A Partial Survey

ELTON M. DAVIES

In the course of studying a particular current problem, or nexus of problems, in which a group of my colleagues have developed an interest, it seemed advisable to obtain an objective view of the total picture of which the problems in question are a part. Specifically, the question thus posed was, **what professional role do faculties play, other than strictly instructional and research, on the campuses of private, independent colleges on the West Coast?** Certain subsidiary questions were also of interest in this particular situation; the central one, however, was as stated.

As an object of inquiry in pursuit of answers to these questions, nineteen accredited private colleges were selected,[1] sixteen in California and three in Oregon. Universities, state colleges, and Catholic colleges were excluded because their size, organizational structure, or sponsorship introduced certain irrelevancies to the particular situation surrounding the problem. The value of the study would have been greater if the state of Washington had

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[1]The twenty-two independent, private, accredited colleges in California and Oregon, nineteen of which were included in this survey, are:

Art Center School, California College of Arts and Crafts, California School of Fine Arts, Chapman College, Chouinard Art School, Claremont College, College of the Pacific, Danforth College, George Pepperdine College, Golden Gate College, La Sierra College, La Verne College, Lewis and Clark College, Linfield College, Mills College, Occidental College, Reed College, Scripps College, Whittier College.

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Mr. Davies extends his appreciation to colleagues on six different campuses for information and views, and particularly thanks Dr. Thomas Hayes, Research Associate, the Radiation Laboratory, University of California, Berkeley, and faculty member of the California College of Arts and Crafts, for his careful review of and recommendations concerning the techniques of correlation used in the study. Gratitude is also expressed for Professors Harold Carter and Thomas Edwards of the University of California, as well as Professors William West and James Schevill of the California College of Arts and Crafts.

been included. But so would the onus of labor involved in the study, and this was a factor to be considered with care.

The best mode of study would, of course, have been by visitation, with at least one or two days spent on each campus. As neither the free time nor the funds was available, this method had to be discarded in favor of an approach by questionnaire. The inquiry, therefore, is a survey rather than a study.

The questionnaire was sent to one faculty member on each of the nineteen campuses who had had ample opportunity to observe faculty operations, usually from the vantage point of a departmental or divisional chairmanship. The nineteen questionnaires mailed were all returned, some bearing explanatory notes and comments of great value.

This survey, then, is:

1. A summary of the knowledge, views, and opinions of nineteen persons (some assisted by collaboration), each of whom was asked to be the sole judge of a complex human and material situation which is different for each person.

2. Conclusions drawn from the summary, again on the basis of the individual views and experience of the summarizer.

The shortcomings of such a survey are obvious. Its purpose will have been achieved if others carry it further and deeper, with findings which may substantiate, or refute, those sketched here.

Summary of Findings

All statements in the succeeding section are to be understood as qualified by the conditions of the study, as described above.

Faculty and Educational Policy

Of nineteen faculties, eighteen are responsible, or to some degree share responsibility, for forming educational policy. Of these, six exercise a power which is legislative, eight exercise legislative power in some areas and are advisory in others, and five are advisory only. Over two-thirds of the faculties, therefore, exercise some degree of legislative power in forming educational policy.

The committee, or committees, whose special concern is the formation of or recommendation concerning this policy (always for referral to the whole faculty, to the administration, or to both), is chosen by election in seven colleges, by mixed election and appointment in four,[2] and by appoint-

[2]Qualifying comment on one questionnaire: "Elected faculty committees are viewed with suspicion and are often circumvented in favor of an appointed council."

ment only in seven. The democratic process of election plays some part in the shaping of educational policy in nearly two-thirds of the campuses considered.

Of nineteen persons filling the questionnaire, sixteen considered that the system prevailing at their respective colleges is a democratic means of obtaining faculty opinion on educational policy, with one adding the comment, "If it were properly used."

Fourteen gave their approval to the system as an effective means of shaping such policy for enactment, three of these approvals being qualified. One considered it ineffective; four withheld judgment.

Sixteen of the nineteen campuses have a dean of the faculty,[3] at least fourteen on a full-time basis (one did not specify).[4] Seven were appointed after consultation with faculty, nine without such consultation.

Faculty and Faculty Affairs

On seventeen campuses the faculty participates to at least some degree in faculty appointments. In twelve cases a faculty committee is involved (one "seldom consulted"). In other cases appointments are made directly through department heads, or as a result of informal conferences. Fourteen faculties are consulted on matters of promotion, of which two are consulted only "sometimes." Four faculties are not consulted. Two answers were omitted.

On at least seven campuses, respect for the faculty is such that it is never by-passed by the administration in the matter of appointments (on two others the statement is not clear). On ten campuses faculty opinion is apparently by-passed or over-ruled on occasion.

Faculty and Finance

The college budget is available to eleven of nineteen faculties. Some of these budgets are not fully detailed, since only three respondents indicated knowledge of specific administrative salaries. In only one case, apparently, is there a committee for budget alone, and this is faculty-elected. A variety of other means are mentioned by which faculty and administration consult on budget. These are usually by committees or advisory councils

[3]The following comment has been made concerning the importance of the Dean of Faculty: "That ——— has no Dean of Faculty is not to be taken as lack of faculty participation, but just the opposite. The dean's work is done by faculty committees. No administrator stands between the faculty and the President." Key committees at this particular college are described as faculty elected; others appointed after consultation with faculty.

[4]On one of the remaining campuses a committee of three faculty members has lately been appointed to assume an academic dean's responsibilities. Each committee member has been released from one course (six hours per week) to meet this responsibility.

performing other functions as well. In one case, "Every faculty member is consulted" on budget matters.

In only nine colleges is a scale of faculty salaries available to the faculty, at least five of which were prepared with faculty cooperation. In three other colleges, however, work on such a scale is now in progress.

At least sixteen of the nineteen colleges employ a business manager (one answer omitted).

Faculty and Physical Plant

Eleven faculties are represented as actively interesting themselves in the maintenance and development of the physical plant, one with the comment, "But this interest is to date recognized only so far as it approves plans originated by administration and trustees." Two others are interested only sometimes, six not at all. Explanations for partial or total lack of involvement are as follows:

Administration assumes responsibility	4
Other faculty duties prevent involvement	1
Faculty feels plant satisfactory	1
Entire plant leased	1

On three campuses a faculty committee exists for the consideration of plant maintenance and/or development. On nine others there is some effective channel through which faculty opinion on these subjects may be conveyed to administration.

Faculty and Trustees

Of five possible channels for faculty-trustee communication listed on the questionnaire, three colleges recognize and employ four of them, five recognize and employ three, six recognize and employ two, and four one only. The remaining respondent comments that the single recognized channel is practically never used.

The five channels occur with the following frequencies:

Through the president	in 18	colleges
Through informal conversations between individual trustees and faculty members	" 12	"
Through joint meetings of faculty and trustee committees	" 6	"
Through dean of the faculty	" 6	"
Through faculty-elected representation on the board[5]	" 1	"

[5]Apparently a channel used much less here than in the East.

Thirteen respondents judged the faculty-trustee relationship to be satisfactory. One added the note: "At the present time—yes, but there have been times when it has not been." The remaining six judged the relationship as unsatisfactory.

The eight reasons advanced for satisfactory relationships follow:

Great pains have been taken to promote real faculty-trustee acquaintance and friendship, regular 'retreats', joint committees, etc.";

"Trustees are guests of faculty club annually on an evening preceding a board meeting. Special needs result in a joint trustee-faculty committee";

High quality of trustees, and personal relationship with faculty";

"Smallness of college—rapport built up through the years";

"To the genuine lively interest the trustees maintain in the college";

"Mutual respect based on clear differentiation of function and responsibility"[6]*;*

"Good leadership on the part of our president";

"The administration properly represents the faculty."

Reasons accounting for an unsatisfactory relationship were as follows:

Little chance to know trustees, and president considers he is the link between faculty and trustees";

"Reluctance of president to fulfill his responsibility of communication; lack of interchange of information and planning";

"Organizational plan of the college, and board-administration policy";

"Lack of trustee and of faculty initiative";

"A congenital condition in present organization";

"Recent changes at college";

"Largely a failure of the president." (This comment was made with reference to the unsatisfactory relationship, mentioned above, which had recently improved. Later information has revealed that the reason for improvement was a change of presidents.)

Other Related Questions

Enrollment

Enrollment in the nineteen colleges ranges between 200 and 1500. The median is about 800.

Endowment

Nine of the colleges are endowed to the extent of $500,000 or over. The remaining ten are reported as having an endowment of under $500,000 (one answer was a surmise only, figures being unavailable to faculty).

[6]Other statements on the same questionnaire indicated a readily consulted faculty and high professional qualifications on the part of the president.

Sixteen colleges attributed success to effort of the president in building the endowment fund. Sixteen attributed it also to trustee effort; eleven to alumni effort. Eight mentioned gifts of founders. One is supported entirely by a church-related subsidy. One could report no successful source of endowment other than the Ford Foundation Grant of 1956.

The Presidency

Of nineteen respondents, eighteen gave a brief description of the background which their respective presidents brought to the presidential office. Sixteen of the eighteen were described as fitted for the office by previous directly relevant experience. Examples follow:

"PhD in History, College teaching experience, High scholarly attainments";

"Training and experience as a scholar and teacher plus, by now, 14 years as a college president";

"Years of administrative work in other liberal arts colleges. Some years as a classroom teacher";

"Professor of Economics, Dean of Men, Dean of the Faculty, President."

The remaining two of the eighteen described apparently came to the presidency without professorial, research, or college-administrative experience. One came from museum direction and WPA administration,[7] and the other from the ministry.

Seven colleges reported that the faculty had been consulted in the selection of the president. Seven others reported that the faculty had not, four did not know, and two omitted answers.

Alumni

Ten colleges reported alumni organizations which are active in both fund raising and student recruitment. Five others reported alumni activity in only one or the other of these directions. Three colleges reported no alumni activities of either kind, or practically none. One has no alumni organization.

Fourteen colleges indicated some form of trustee encouragement to alumni activities. The nature of this activity, described in only eleven cases, varies widely. Three types of encouragement were mentioned: financial support, generally of an alumni secretary; inclusion of alumni representatives among the trustees; and verbal encouragement. Of these, the first and second are the ones best calculated to spur alumni activity, by supplying a physical and political means for it. The last, verbal encouragement, the most easily bestowed, has a proportionately slight value.

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[7]Resigned June 1957, permanent successor not designated as of March 1958.

Of the eleven returns specifically describing trustee encouragement of alumni, financial support is mentioned five times, trustee representation five times, and verbal encouragement three times. One of the questionnaires indicating financial support to the alumni, and alumni representation on the board, bears the following note:

"Support has been sporadic only, preventing a continued program, and harmful to alumni morale. Reason for trustee decision to curtail financing of alumni activities has been economy, but this has prevented the very activities by which alumni aimed to help the financial situation. Changed policy this fall will be encouraging if consistently pursued."

Resumé: Optimum Faculty Role

In an endeavor to draw an approximately clear picture, for comparative purposes, of the number and the quality of faculty responsibilities, powers, and significant professional relationships on the various campuses, a list of fourteen features which seemed optimum was derived from a perusal of the returned questionnaires, as follows:

1. Faculty exercises some legislative power in forming educational policy.
2. Membership on faculty committees or councils involved in forming such policy is determined at least in part by election.
3. Faculty considers procedures in forming such policy **both** democratic **and** effective.
4. Faculty (whether as a whole or through department heads, committee or council) participates in **all** appointments to faculty (i.e., without being in practice by-passed).
5. Faculty participates in deciding questions of promotion.
6. There is a dean of the faculty.
7. Faculty was consulted in his appointment.
8. College budget is available to faculty.
9. Faculty has in some degree participated in formation of a salary scale, whether as a faculty or through the AAUP.
10. Faculty is actively interested in maintenance and/or development of physical plant.
11. President fitted for position by previous professorial, creative research, or college administrative experience.
12. Faculty was consulted in selection of president.
13. Faculty-trustee relations considered satisfactory.
14. Trustee-faculty channels of communication number at least two.

TABLE I

Colleges in Descending Order of the Reported Number of Opportunities for Optimum Role of Faculty

	Colleges by Rank (Indicated by Score)																		
	1	2	2	4	5	6	7	8	9	10	11	12	13	13	15	16	17	18	18
1. Faculty exercises Legislative power	x	x	x	x	x	x	–	x	x	–	x	x	x	x	x	x	–	–	–
2. Faculty exercises electoral power	x	x	–	x	x	x	x	x	–	–	x	x	–	–	–	–	x	Q	–
3. Formation of policy democratic and effective	x	x	x	x	Q	x	Q	x	Q	x	–	Q	x	x	x	x	Q	–	–
4. Faculty shares in appointments	x	x	x	x	x	Q	–	x	x	–	–	–	–	–	Q	–	–	Q	–
5. Faculty shares in promotions	x	x	x	NS	x	Q	x	x	x	NS	x	–	x	x	–	Q	–	Q	–
6. There is a Dean of Faculty	–	x	x	x	x	x	x	x	x	x	x	x	x	x	–	Q	x	Q	x
7. Faculty shared in Dean's appointment	NS	x	x	–	x	Q	x	x	x	–	–	–	–	–	–	–	–	–	–
8. Budget available to faculty	x	x	x	x	x	Q	x	–	x	x	x	–	–	–	–	–	–	–	Q
9. Faculty shared in salary scale	x	Q	x	x	–	Q	NK	–	–	x	–	Q	–	–	–	–	–	Q	x
10. Faculty shares in physical plant	x	–	x	x	x	x	x	–	–	x	–	*	–	x	x	Q	x	Q	Q
11. President has professional background	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	NS	–	–
12. Faculty consulted in selection of president	x	x	Q	NS	x	x	NK	NK	Q	Q	x	–	–	–	NK	–	–	–	–
13. Faculty-trustee relations satisfactory	x	x	x	x	x	x	x	x	x	x	x	x	x	–	–	–	–	–	–
14. Faculty-trustee channels 2 or greater	x	x	x	Q	Q	x	x	x	x	x	x	x	x	x	x	x	–	Q	Q
SCORE	.92	.89	.89	.88	.86	.82	.79	.77	.71	.65	.64	.54	.50	.50	.42	.39	.27	.25	.25
15. Number of faculty-trustee channels	2	4	4	1	1	3	3	3	3	2	4	2	3	2	2	2	0	1	1

*Entire plant leased.

The results of this approach are given in Table I. A square containing an **X** indicates an affirmative reply derived from a questionnaire, a blank square negative. **Q** indicates a qualification to a reply or statement. Specifically, and for example, it indicates that a faculty committee or power exists but is in at least partial disuse by choice or circumvention, that a dean of the faculty is on a part-time basis only, etc. Grounds for other qualifications are stated in the discussion preceding.

NK indicates answer is not known by respondent, and **NS** indicates answer not stated.

On the chart a fifteenth column records the number of faculty-trustee channels reported to be recognized and open on the respective campuses.

By assigning to each affirmative answer (X) an arbitrary value of one, to each qualified answer (Q) a value of one-half, and to each negative answer or failure to answer a value of zero, it was possible to make a comparison of the nineteen colleges on the basis of arithmetical totals. When the total for each college was divided by the total number of judgments made for that college, it was found that the highest score was .92 and the lowest .25. The colleges are ranked in descending order in the tables, according to the scores achieved. (The scores are indicated in Table I.)

TABLE II

Fund-Raising

	Colleges by Rank																	
Effective Fund-Raising by:	1	2	2	4	5	6	7	8	9	10	11	12	13*	13	15	16	17	18	18
President	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	–	–
Trustees	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	–	–
Alumni	x	x	x	x	x	x	x	x	x	–	–	x		x	x	–	–	–	–
Total	3	3	3	3	3	3	3	3	3	2	2	3		3	3	2	2	0	0

*Church subsidized; not relevant to this part of study.

In Tables II and III are listed judgments on two other areas of activity not directly involving faculty. Table II indicates the fund-raising effectiveness of the president, the trustees, and the alumni. Table III lists judgments on alumni activities and encouragement.

TABLE III

Alumni Activities and Encouragement

Alumni is:	Colleges by Rank																	
	1	2	2	4	5	6	7	8	9	10†	11	12	13*	13	15	16	17	18	18
Active and Effective in Fund-Raising	x	x	x	Q	x	x	x	x	Q		–	x		x	x	Q	–	–	–
Active in recruitment	x	x	x	x	x	x	x	x	x		–	–		–	x	x	–	x	Q
Substantially encouraged by trustees	x	x	x	–	–	x	x	x	–		x	–		–	–	–	NK	Q	–
Total	3	3	3	1.5	2	3	3	3	1.5		1	1		1	2	1.5	0	1.5	.5

*Church subsidized; not relevant to this part of study.
†No alumni organization. Support from professional group.

Correlations

As a first approach to correlation, an appraisal was made to determine which of the positive qualities are most prevalent in the relatively high-scoring colleges, and least prevalent in the low-scoring. An average or mean was obtained for the high and low halves of questions I through 14,[8] and for the column of total scores, all listed in Table I. The greatest divergence between high and low score averages was found in the answers to questions 4, 5, 7, 8, 12, and 13. The comparisons are indicated in Table IV.

The next problem was to choose which of these five questions to use as a criterion for further correlations. Numbers 12, 8, 7, 4, 5 all proved unsatisfactory, because the presence of qualified, unknown, or unstated answers made them unusable as a basis for clear-cut classification. Number 13 (faculty-trustee relationships) was the single choice left. Other considerations also suggested this as a valuable basis for correlations. The colleges were accordingly divided into two groups: thirteen in which trustee-faculty relations were judged satisfactory (henceforth called Group A), and the remaining six in which these relations were judged unsatisfactory (henceforth called Group B). The following observations were then made from an inspection of Table I:

[8]That is, for the top and bottom halves of the total number of observations actually made in each column. Where the total is an odd number (all but Columns 7, 9, 10, 11), the odd unit is given to the top half.

1. Colleges in Group A average over twice as many opportunities to faculties to play an optimum role as do those in Group B.

(Average total scores: Group A—.76; Group B—.35)

2. Recognized channels of communication between trustees and faculty in Group A more than double, on the average, those in Group B.

(Averages: Group A—2.69; Group B—1.33)

3. Every college in Group A is headed by a president who came to his office with a background of experience in college teaching, research, or college administration, or a combination of these. Two of the six in Group B did not.

4. No college in Group B could report that the faculty had been consulted in selection of either the president or the academic dean.

5. The budget is available to over four times as many faculties in Group A as in Group B. (At least 9 out of 13 in Group A; at most 1 out of 6 in Group B.)

6. In about half the colleges in Group A, faculty opinion is consistently included in deciding matters of faculty appointment and promotion (one with qualifications). In only one college in Group B is this the case, and that is qualified also.

7. Eleven faculties in Group A exercise legislative power in deciding academic policy. Only three in Group B do. (Group A—85%; Group B—50%.)

8. Nine faculties in Group A exercise the electoral power. Two do in Group B (one with qualifications). (Group A—69%; Group B—33%.)

TABLE IV

Means of Scores in the Top and Bottom Halves of the Fourteen Rows of Table I

Question	*Mean* *Top Half*	*Bottom Half*	*Difference*
1	.80	.67	.13
2	.70	.44	.26
3	.85	.56	.29
4	.75	.11	.64
5	.94	.38	.56
6	.90	.78	.12
7	.72	0.00	.72
8	.94	.17	.77
9	.56	.22	.34
10	.67	.61	.06
11	1.00	.78	.22
12	.81	0.00	.81
13	1.00	.33	.67
14	.90	.77	.13
Total Score	.82	.42	.40

When comparison of Groups A and B is extended to Tables II and III, additional correlations appear.

9. By faculty rating, at least, colleges in Group B show only about half as much effective activity in fund raising on the part of president, trustees, and alumni organizations (where existent) as do those in Group A. (Averages: Group A—.97; Group B—.56)

10. Again by faculty rating, activity of alumni organizations in fund raising and recruitment, taken together with substantial trustee encouragement of these organizations, is, on the average, half as great in the colleges of Group B as in those of Group A. No college in Group B reports a fully active and substantially encouraged alumni organization (three X's), whereas six colleges in Group A report such a combination.

No appreciable correlation could be discovered between membership in Group A, membership in Group B, and the size of endowment (at least by the rough measure of the questionnaire for this survey).

Conclusions

The connections between trustee-faculty relations and other aspects of college activity and personnel relations which emerge from this survey through an arithmetical approach to the data, would seem to be borne out by other considerations as well.

The life of any institution of learning depends, to a degree even greater than the dissemination of knowledge, on the exercise and development of thought, which in turn is in large part derived from the free meeting of responsible and informed minds.

The concept that, in a college, this free exercise and meeting of minds shall be limited to certain areas (academic, on the part of faculty; managerial, financial, personnel, on the part of administration and trustees) is suggested to be a serious error, and seems to be based on a confusion between the nature of thought on the one hand, and the nature of political power on the other.

The clear distinction between various powers and duties, and their delegation to appropriate individuals and groups, is an essential to any organization of human beings, and must be respected as a necessary instrument to effective operation. The nature of human thought, however, is not subject to such channeling, particularly in a free society, and must also be respected as the creative source to which all forms of human development, including political institutions, owe their existence and improvement.

An institution in which the endeavor to keep various political powers distinct extends to an erection of barriers to the exchange of thought, especially when this separates informed and responsible minds in an area where the meeting is cogent, merely cuts that institution from the intellectual source which created it, and on which it must rely for future adaptation and growth.

Men accustomed to the administration of industries in which much of the labor has been, until recently, and in some cases still is, largely unskilled or semi-skilled, have sometimes developed a point of view toward plant management, usually heightened by difficulties with organized labor, which they may be tempted to transfer to an institution, such as a college, to whose trustee body they find themselves elected. To such men, with their hard-won experience, the views just expressed may sound idle or even dangerous. It is not, however, until such men have met, mind to mind as it were, with the faculties for whom they have a lately-found responsibility, that they discover themselves entering upon a new world—a world in which production is primarily intellectual rather than material; where personnel are members of a profession rather than a union; and in which not only the standards, but the requirements for survival, are of a new and different order.

The question will perhaps be raised as to whether faculties are not as responsible through aloof behavior for any resulting dichotomy as are trustees. It must be borne in mind that custom places the responsibility for friendly overtures with the trustees; faculties therefore hesitate to take the initiative.

A tendency to overlook these and similar considerations appears in the data from the six colleges in Group B. In this group, faculty-trustee relations are relatively few and poor, implying, somewhere, indifference, unawareness, or distrust.

One of the most important characteristics of a profession—self-evaluation by the membership—is ignored by the prevalent failure within this group consistently to consult faculty on appointments, both faculty and administrative, and on promotions.

A misconception as to the value, perhaps the necessity, of academic experience to the successful running of a college is evidenced by the presence in Group B of presidents apparently without such previous experience.

A misconception as to faculty attitude toward budget, and the value of faculty thinking on financial matters, is shown by the relative rarity with which Group B faculties and budgets connect.

The tradition and value of the legislative and electoral powers, as exercised in suitable areas by faculties, are overlooked more often in Group B than in Group A.

Lastly, colleges with poor or insufficient trustee-faculty relations tend to show poor or insufficient trustee-alumni relations also, and suggest a relative ineffectiveness in fund raising.

The remedy would seem to be, first of all, communication. From the meeting of minds comes acquaintance; from acquaintance, respect, if deserved. From respect, the generous sharing of views, confidences, and powers.

Predicting College Success with the ITED

RALPH C. O'NEILL

With mounting college enrollments in California and higher admission standards, the high school counselor and college admissions officer need as much information as possible to help the high school student plan his educational and vocational future. A major portion of this information can be gained through the use of standardized test results. Lindquist (1) reports that more and more colleges are using objective tests to help predict the success of college students. Almost all high schools in California are using standardized test batteries for a number of purposes, foremost among which is the prediction of college success. About 10 per cent of all California high schools are giving the *Iowa Tests of Educational Development* (ITED) to all or part of their students each year.

Background

The present study was undertaken to provide a check on the predictive powers of the ITED, in terms of college success, already shown to be quite high in the midwestern United States. These relationships are reported in a Science Research Associates publication (2). The intent of this study is to add to existing information and provide the additional information outlined below. Because the great majority of students going to college must make their plans before the 12th grade, the correlation coefficients between the ITED taken in the 10th grade of high school and later college grade averages will be reported here. Specifically, the following information was obtained during the course of this study:

(1) Correlation coefficients between the ITED Composite Score and college grade averages at four different institutions of higher education in California.

Ralph C. O'Neill, School Psychologist for the South San Francisco Unified School District, obtained his B.S. degree at Wayne State University in 1952 and M.A. at Stanford University in 1956. He is currently finishing his doctoral program at Stanford University. *This research was facilitated by financial support from the Science Research Associates.*

(2) Correlation coefficients among the high school grade average, the *American Council of Education Psychological Examination for College Freshmen* (ACE), and college grade averages at the same institutions.

(3) Multiple correlation coefficients among the ITED Composite Score, high school grade average, and first year college grade average.

The ITED includes nine subtests, eight of which contribute equally to a total Composite Score. The Composite Score is used in this study as the main predictive variable of college grade average.

Procedures

Four colleges in California were selected as criterion institutions. They were the College of San Mateo, San Jose State College, Stanford University, and the University of California at Berkeley. It was felt that these schools were representative of the higher learning institutions in California.

TABLE I
Description of the Sample

School	*Number of Males*	*Number of Females*	*Total Number*
College of San Mateo	39	26	65
San Jose State College	17	52	69
Stanford University	35	19	54
University of California at Berkeley	87	107	194
All schools combined	178	204	382

Fifty-seven California high schools, both public and parochial, gave the ITED to their 10th grade students in the fall of 1951. From this total of 57 schools, 33 contributed data and are included in the present study. Three hundred eighty-two subjects from these 33 high schools were secured by the following: the names of students who had graduated from the 33 high schools, and who had attended one of the four criterion colleges for at least one year, were obtained from the college registrars.

Additional information for each subject included:

(1) Scores on the ITED taken in the 10th grade.

(2) High school grade average.

(3) Score on the ACE taken early in the freshman year of college, and

(4) College grade average for the freshman and sophomore years.

The ITED Composite Scores and all the ITED subtest scores, the high school grade averages, two groups of ITED subtests, and the total score on the ACE were correlated, using the Pearson Product Moment Correlation, with college grade averages. From this the best predictor of college success was determined.

Results

Prediction of College Success from the ITED Composite Score

Table II shows that the correlation between the ITED taken in the 10th grade and college success at the end of the first year is at an average level of .40 with a range from .26 to .67. These correlations seem to compare favorably with other studies where a three-year lapse of time has taken

TABLE II

Product-Moment Correlations Between ITED Composite Score and College Grade Averages at Four Colleges

School	*Correlations (r) between ITED Composite Score and Freshman GPA*	*Sophomore GPA*
College of San Mateo	.42 (N = 65)	.25* (N = 36)
San Jose State College	.26* (N = 69)	.30* (N = 56)
Stanford University	.67 (N = 54)	.75 (N = 42)
University of California at Berkeley	.35 (N = 194)	.43 (N = 152)
All schools combined	.40 (N = 382) (r, average)	

*Significant at the .05 level. All others are at the .01 level.

place between the predictor and criterion. It can also be seen that when one uses a correlation coefficient and reported regression equation the population from whom they were derived must be specified. A counselor could predict at Stanford, for example, with much more confidence than at the University of California if the ITED were the only instrument he was using.

Prediction of College Success from Information Other Than the ITED

To determine how "good" the correlations are which are reported in Table II we must examine the reported coefficients in Table III. Here we

see that high school grade average is a better predictor of college freshman grade average than is the ITED Composite Score and the total score on the ACE.

TABLE III

Product-Moment Correlations Between High School Grade Average, College Grade Average and Total Score on the ACE at Four Colleges

Correlations (r) Between	*College of San Mateo*	*San Jose State College*	*Stanford University*	*University of California at Berkeley*
Total Score on the ACE and Freshman Grade Average	.39 (N=59)	.22† (N=69)		
High School Grade Average and College Freshman Grade Average	.48 (N=65)	.52 (N=69)	.75 (N=54)	.49 (N=194)
High School Grade Average and College Sophomore Grade Average	.39 (N=36)	.53 (N=56)	.69 (N=42)	.45 (N=152)
College Freshman Grade Average and College Sophomore Grade Average	.93 (N=36)	.86 (N=56)	.88 (N=42)	.90 (N=152)
Multiple Correlation among: (1) High School Grade Average (2) Composite ITED Score (3) College Freshman Grade Average	.539	.539	.83	.519

†Not significant at the .05 level of significance on the two tail test. All others significant at the .01 level.

At every school the multiple correlation shows that when high school grade average and the ITED Composite Score are used together as one predictor for the college freshman grade average we have a slightly higher predictor than when high school grade average or the ITED Composite is used alone as a predictor of college freshman grade average. The best predictor of the college sophomore grade average is the college freshman grade average.

By correlating the separate Iowa subtests and two groups of three Iowa subtests with college grade averages it was found that no single subtest or group of subtests predicted college success consistently at each college as well as did the ITED Composite Score.

(Continued on page 93)

How Gifted Junior High Students Attack Unknown Words

DELWYN G. SCHUBERT

How does the gifted child handle new words when he reads? Are his methods different from those normally employed? Are they idiosyncratic? Are they sound? Questions such as these prompted the author to conduct the following investigation.

With the cooperation of junior high school teachers enrolled in the writer's classes, the author was able to gather 172 responses from 86 gifted students* to the following query: When you come across a word in your reading that you do not recognize, what do you do?

Table I shows that 55 of the 86 students employ the dictionary when they encounter a word they do not recognize in their reading. This approach constituted 32 per cent of the total responses made. The usual remark was simply, "If I don't know a word, I look it up in a dictionary."

The table also shows that another popular approach to handling new words (54 students mentioned it) involved asking another person for help. Twenty of these students referred to "asking someone." Fourteen responses involved "asking another." Ten students said, "ask my parents." Only a handful of students would "ask the teacher," or "ask father."

Twenty-nine students (16.9 per cent of the total responses) mentioned utilizing context clues. Representative responses were: "I try to figure it out by the way it is used." "I try to figure it out by the words around it." "I look to see how the word matches up with the rest of the sentence."

*All I.Q.'s exceeded 130.

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Nineteen students or 11 per cent of the total responses referred to skipping, omitting, or not bothering with strange words. One student said, "I usually don't bother with new words. It depends on how I feel." Another student stated, "When I come across a strange word, I just skip it." A third student put it this way, "When the story is good, I jump over words I don't recognize."

Only 5.8 per cent of the students in this sample resorted to phonetic and structural analysis when encountering words they failed to recognize. Those who did employ these approaches said things like, "I sound it out," or "I break it into syllables." One student said, "I look for little words inside of it."

A very small number of students (five), who obviously associated text book reading with encountering new words, said that they "looked in the glossary for help."

TABLE I

Methods of Word Attack Used by Eighty-six Gifted Junior High School Students

Method	*Number of Students Responding*	*Percentage of Total Responses*
Use of the dictionary	55	32.0
Asking another person (someone, mother, parents, teacher, father)	54	31.4
Use of contextual clues	29	16.9
Skip it	19	11.0
Phonetic and Structural Analysis	10	5.8
Use Glossary	5	2.9
Total:	172	100

In an attempt to evaluate the methods of word attack which were employed by the gifted students in this study, it is necessary to consider what approaches to the problem are available. With few exceptions, all constructive aids in attacking new words fall into one or more of the following categories: Picture, structural and contextual clues; phonetic analysis; and dictionary usage.

The gifted students in this study appear to make adequate use of the dictionary and contextual clues when they encounter unknown words. They profit little from picture and structural clues or phonetic analysis. They are too dependent on less commendable approaches to the problem, such as asking someone for help or skipping unknown words.

(Continued on page 94)

A Study of Nursery School Personnel, Practices, and Teaching Concepts

MERILYN BURTT

The study was undertaken for three purposes: to determine current organizational and administrative practices in nursery schools in the Foothill area of Los Angeles County; to obtain biographical data on the background and training of teachers in these schools; and to make an exploratory investigation of concepts nursery school teachers hold in regard to selected areas of child behavior in the nursery school situation.

Two methods were used to implement these purposes. A personnel practices questionnaire was distributed to all licensed nursery schools in the Foothill area. A tabular description was made of the information received from the forty-two schools (49% return) and eighty-eight teachers (53% return) replying to the questionnaire. Seven different types of schools were represented in this survey: private, parochial, laboratory, community, cooperative, public child care, private child care. This information was broken down by types of schools for purposes of comparison.

In addition, a "situation sheet" questionnaire was given teachers in an exploratory attempt to learn more about their concepts of child behavior as focused in the areas of aggression, toilet-training, socially-withdrawing or non-conforming behavior, and children's feelings. Four rating scales were used to score teachers' responses to the child behavior situations, and a panel of three judges scored a random sample of the situation sheets to test the reliability of the scales. The panel of judges represented the fields of early childhood education, child psychiatry, and clinical psychology.

Information taken from the personnel practices questionnaire indicated that nursery school teachers in this geographical area are mostly middle-aged married women, less than half of whom are college graduates. Most of the teaching jobs are part-time, the exceptions being in public child care centers. The highest teacher's salary was $330 per month for a public child care teacher in a full day program.

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Three rating scales applied to teachers' responses to the child behavior situations proved reliable and indicated that, according to the raters' judgments, the teachers were: fairly understanding of aggressive behavior; less accepting of socially-withdrawing or non-conforming behavior; and that slightly more than half of the teachers mentioned the child's feelings when discussing the child behavior situations.

Differences in scores shown for teachers by types of schools were numerically small but formed a consistent pattern throughout the rating scales. Laboratory, community, and cooperative teachers scored at a slightly higher level than private, parochial, and public child care teachers.

Predicting College Success . . .

(Continued from page 89)

Conclusions

The following conclusions and generalizations seem to be warranted on the basis of the evidence presented above:

(1) Scores obtained on the ITED in the 10th grade of high school provide the counselor with useful information as to the advisability of higher education, without having to wait for the final high school grade average.

(2) As might have been suspected, the high school total grade average provides the best prediction of success in the first year of college and the college freshman grade average provides the best prediction of success in the second year of college.

(3) By using both the high school grade point average and the ITED Composite Score the student's likelihood of succeeding in college can be estimated with a greater degree of confidence than by using either one alone.

REFERENCES

1. Chauncey and Frederiksen, "The Functions of Measurement in Educational Placement," Chapter 4, pp. 85-116, in E. F. Lindquist, ed., *Educational Measurement*, American Council on Education, Washington, D.C., 1951.
2. *Using the Iowa Tests of Educational Development for College Planning*, Chicago, Science Research Associates, Inc., 1957.

Sick Leave for Teachers

(Continued from page 63)

7. A certificated public school employee should receive, when eligible, both full pay for sick leave absence and payments for Workmen's Compensation Insurance Fund.

8. Public school districts should adopt a program of supplementing Workmen's Compensation Insurance to prevent the employee's income from diminishing in the case of injury in the course of employment.

9. Sick leave should be given to certificated public school employees for personal illness, injury, quarantine, or serious illness in the immediate family.

10. A certificated public school employee should be allowed to transfer his unused days of sick leave from one district to another within the state upon changes in employment.

Gifted Junior High Students . . .

(Continued from page 91)

One can understand why gifted junior high students might overlook picture clues, since they would have minimal value at the junior high school level. But with a language that is more than 80 per cent phonetic, why should phonetic and structural analysis receive so little attention? Is it possible that the students in this sample forgot to mention these word attack approaches? A more probable explanation is that the instruction to which these students had been exposed minimized these aspects of word attack.

One thing is certain. Junior high school teachers cannot afford to assume that high intelligence insures a versatile and independent approach to word recognition problems. Gifted children need systematic instruction in this area if they are to utilize fully the methods of independent word attack available to them. With such instruction they will be less prone to skip an unknown word or ask someone else to furnish it.

Book Reviews

WHO RUNS OUR SCHOOLS?

By NEAL GROSS

New York: John Wiley and Sons, 1958. xvi-195 pages. $4.75.

This book deals with a number of important questions about the public schools. It is based on lengthy and confidential interviews with approximately 50 per cent of the school superintendents and their school board members in Massachusetts. Although the author expresses concern over applying generalizations outside of Massachusetts, there are sufficient similarities to other communities and states to warrant consideration of common problems. A cursory glance at the chapter headings indicates these difficulties with which all are aware: "What Holds Superintendents Back?" "Who Blocks the Public Schools?" "Who Supports the Public Schools?" "Why Do People Want to Be School Board Members?" "How Good a Job Are School Boards Doing?"

Of special interest to school administrators and school boards are the chapters and sections dealing with pressures placed on the schools by individuals or vested-interest groups. The author pleads for a formalized procedure for handling situations in which an individual most frequently exerts pressure. His "procedure" is actually a clearly stated personnel policy for handling such items as teacher selection, salary increases, and school contracts. To relieve tensions which are related to the nature of the school program, and which are more closely associated with group pressures, Mr. Gross believes that the board should establish a mechanism whereby citizens can express their views about school policies and programs. In such cases, a public opinion poll or a citizens' advisory committee is advocated.

The author firmly believes that problems confronting public education must be brought to the surface so that they can be dealt with realistically and effectively. Thus, his purpose in writing the book is to stimulate a greater interest in public education. The people, he contends, need to give greater attention to the schools; they have a right to know the facts about the enterprises in which they have so heavily invested and from which they expect so much.

The style of the book is openly frank—little, if anything, is withheld. The mode of writing is certainly refreshing, easy to read, and free of educational jargon. *Who Runs Our Schools* should be "required reading" for every superintendent and school board member. JHB

Research News and Views

D. Welty Lefever, a member of the Advisory Council, reports that the Ford Foundation is underwriting a project entitled the *Youth Studies Center* at the University of Southern California. The program will investigate the cause and treatment of juvenile delinquency over a five-year period. Dr. Lefever is one of the staff members engaged in the research.

Two members of the Advisory Council are engaged in compiling lists of research studies. Harry Smallenberg is completing this material for Los Angeles County, while Howard Bowman is accomplishing a similar project for Los Angeles City. Incidentally, Dr. Bowman was recently a candidate for Director for the National Council on Measurements in Education. Nomination for this important position is a great honor.

Arthur Coladarci, of the Advisory Council, announces that the Ford Foundation has awarded a grant to the University of Tokyo and Stanford University School of Education to undertake a systematic analysis and evaluation of post-war developments in Japanese education. Stanford will select and send four American research scholars to Japan, each for a one-year term, to participate in the research project during a two-year period beginning September, 1959. The four appointees are to be a specialist in one of the following areas: educational finance, administration, and school organization; curriculum and methods; higher education; and social science —for this post a person not directly in professional education, but one who has sufficient sophistication about education to permit him to raise heuristic questions.

David Segel, formerly with the United States Office of Education, has recently been appointed as the research consultant for the pilot study of gifted students being conducted by the State Department of Education. Dr. Segel was the Assistant Research Director for the Long Beach Public Schools from 1924 to 1931.

The Association for Supervision and Curriculum Development-NEA, in cooperation with the National Institute of Mental Health, will sponsor the Fourth ASCD Curriculum Research Institute on May 2-6 in Los Angeles. The theme will be "Undeveloped Capacity to Learn: An Area in Need of Study." For details contact ASCD-NEA, 1201 Sixteenth Street, N.W., Washington 6, D.C.

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